# HP Service Manager

Software Version: 9.34
For the supported Windows® and UNIX® operating systems

## Troubleshooting help topics for printing

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# Troubleshooting

The HP Service Manager troubleshooting section contains the following resources to help you troubleshoot Service Manager issues:

# Troubleshooting

The section lists the troubleshooting topics available for the specified area of Service Manager. These areas include:


- "Troubleshooting: Server startup" below
- "Troubleshooting: Common database errors" on page 14
- "Troubleshooting: Knowledge Management" on page 20
- "Troubleshooting: Event Services" on page 21
- "Troubleshooting: clients" on page 27


## Troubleshooting: Server startup

This section provides some basic information about anticipating and correcting issues related to server startup. Some of these issues include:

- Server will not start
- Bad version number in .class file
- Failed to initialize or attach to shared memory environment (Windows only)
- Unable to attach to shared memory (Linux only)
- Java buffer size errors occur in the server log

## Troubleshooting: Server will not start

Possible causes:

- incorrect configuration
- incorrect database password
- unsupported JRE version

## Incorrect configuration and Missing or wrong database password

If you are unable to start Service Manager from the command prompt, review your configuration in `sm.ini` and confirm that you have the correct database connection information, login, and password, using the instructions in the Service Manager installation guide.

The Service Manager server starts as a Windows service by default. If the server starts from the command line, but not as a Windows service, uncomment the following line in `sm.cfg` to produce an output file which may contain some information from the Java JVM.

```
#cmd /c "sm" > C:\\process_stdout 2>&1
```

You can change the name and location of the output file by changing "C:\\process_stdout" to the path and file name you prefer. Using "C:\\process_stdout.log" creates a file called `process_stdout.log` at the root of the C drive. Once you have done this, try starting the server as a service. Any Java errors that occur will show up in the file and folder you specified.

## Unsupported version of JRE

If you have installed a version of Java Runtime Environment (JRE) that is not supported, the server displays the following error message:

```
Exception in thread "main" java.lang.UnsupportedClassVersionError: Bad version
number in .class file
```

Install a supported version of the JRE as indicated in the Service Manager installation guide.

# Troubleshooting: Bad version number in .class file

The Service Manager server requires a Java 6 run-time enviroment (JRE) to start. If the server does not start and you receive a "`Bad version number in .class file`" error message, then your system does not have the proper version of the JRE installed.

Service Manager installations on Windows and Linux should already include the proper JRE necessary to start the server. If you receive this error on a Windows or Linux system, you may need to reinstall the server to get the proper JRE version.

Installations on systems running AIX, HP-UX, or Solaris require you to provide your own JRE. Install a Java 6 JRE as directed by the *HP Service Manager Installation Guide*.

# Troubleshooting: Failed to initialize or attach to shared memory environment (Windows only)

If the Service Manager server does not start and you receive a "Failed to initialize or attach to shared memory environment" error message, then your Windows system has one of two issues:

- There is not enough free contiguous memory available to initialize Service Manager
- The address Service Manager attempted to use for shared memory was already in use by a shared library (DLL), dynamic memory (heap), or another data structure

Review the sm.log file and search for one of the following RTE error messages:

| Type of error | Error Message |
|---|---|
| **Insufficient free memory** | RTE E Error 8 in call MapViewOfFileEx - Not enough storage is available to process this command. |
| **Address already in use** | RTE E Error 487 in call MapViewOfFileEx - Attempt to access invalid address. |

## Insufficient free memory

Out-of-box, Service Manager analyzes the memory layout of the process address space and identifies free memory ranges big enough to hold shared memory. If Service Manager could not find any contiguous piece of memory large enough to contain your Service Manager shared memory, the system fails to start with the following error messages:

```
RTE E Error 8 in call MapViewOfFileEx - Not enough storage is available
to process this command.
...
RTE E No valid shared_memory_address parameter setting was found for a
shared memory size of nnnnnnnnnn (NNNN MB)
```

In order to fix this issue, you must reduce the amount of shared memory.

## Address already in use

When a Service Manager process attaches to shared memory, it has to use the same address as the shared memory was originally created with. The process might find that that address is already occupied by another data structure such as a DLL or dynamic memory (heap). The same scenario might happen if you use the shared_memory_address parameter, but the address specified in the parameter is already occupied.

If you had previously specified a shared memory address with the shared_memory_address parameter, HP recommends you remove the parameter and have Service Manager automatically determine a suitable memory address. The current best practice is to only specify a shared_memory_address value if the automatic assignment fails.

After this type failure, the system will scan your system memory searching for a memory range that is large enough to contain Service Manager's shared memory. If the scan finds a suitable memory range it lists it in the log file with the following RTE information messages:

```
6116(  2716) 03/05/2010 11:06:41  RTE E shmat: MapViewOfFileEx failed
6116(  2716) 03/05/2010 11:06:41  RTE E Error 487 in call MapViewOfFileEx - Attempt
to access invalid address.
```

```
6116(  2716) 03/05/2010 11:06:41  RTE E sm_init: shmat( 516, 0x73000000, 0 ) failed
for size 67108864 and key 0x2A02E500
6116(  2716) 03/05/2010 11:06:41  RTE I List of possible shared_memory_address
parameter settings for a shared memory size of 67108864 (64 MB)
6116(  2716) 03/05/2010 11:06:41  RTE I # Free range 0x7FFF0000-0xFFFAD000
size=2147209216 (2047 MB)
6116(  2716) 03/05/2010 11:06:41  RTE I Preferred        : shared_memory_
address:0x80000000
6116(  2716) 03/05/2010 11:06:41  RTE I Lowest available : shared_memory_
address:0x80000000
6116(  2716) 03/05/2010 11:06:41  RTE I Highest available: shared_memory_
address:0xFBFA0000
6116(  2716) 03/05/2010 11:06:41  RTE I For a complete list of available shared_
mempory_address settings, run with the debugvmmap parameter.
6116(  2716) 03/05/2010 11:06:41  RTE W !!! Use the preferred shared_memory_address
parameter above
6116(  2716) 03/05/2010 11:06:41  RTE W !!! or remove the shared_memory_address
parameter completely.
6116(  2716) 03/05/2010 11:06:41  RTE E HP Service Manager is unable to start.
Failed to initialize or attach to shared memory environment
```

The scan lists three possible shared_memory_address values. The first memory address is the preferred shared_memory_address value. This address is the least likely to already be in use by a Windows or Service Manager shared library (DLL), dynamic memory (heap), or another data structure. The next address is the lowest possible address within this range you can use for shared memory. The last address is the highest possible address within this range you can use for shared memory. Pick one of these values for your shared_memory_address and test to see if the system starts.

If your system continues to fail with the address already in use error, you can start the server with the debugvmmap parameter to see a complete list of all address ranges large enough to contain shared memory as well as an address map of all the files that are currently using system memory. The list of memory ranges are in order of suggested use. The address ranges at the top of the list are better candidates than those at the bottom of the list. Within each address range there is a recommended address, lowest possible address, and highest possible address.

```
2724(  3572) 03/05/2010 11:06:38  RTE I List of all possible shared_memory_address
parameter settings for a shared memory size of 67108864 (64 MB)
2724(  3572) 03/05/2010 11:06:38  RTE I # Free range 0x7FFF0000-0xFFFAD000
size=2147209216 (2047 MB)
2724(  3572) 03/05/2010 11:06:38  RTE I Preferred        : shared_memory_
address:0x80000000
2724(  3572) 03/05/2010 11:06:38  RTE I Lowest available : shared_memory_
address:0x80000000
2724(  3572) 03/05/2010 11:06:38  RTE I Highest available: shared_memory_
address:0xFBFA0000
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x122B5000-0x30000000 size=
500477952 ( 477 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                    shared_memory_
address:0x20000000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
```

```
address:0x122D0000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x2C000000
...
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x77DF0000-0x7C360000 size=
72810496 (  69 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                    shared_memory_
address:0x77E00000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
address:0x77E00000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x78360000
2724(  3572) 03/05/2010 11:06:38  RTE D # Free range 0x039B0000-0x10000000 size=
207945728 ( 198 MB)
2724(  3572) 03/05/2010 11:06:38  RTE D                    shared_memory_
address:0x039C0000
2724(  3572) 03/05/2010 11:06:38  RTE D Lowest available : shared_memory_
address:0x039C0000
2724(  3572) 03/05/2010 11:06:38  RTE D Highest available: shared_memory_
address:0x0C000000
2724(  3572) 03/05/2010 11:06:38  RTE W !!! Use the preferred shared_memory_address
parameter above
2724(  3572) 03/05/2010 11:06:38  RTE W !!! or remove the shared_memory_address
parameter completely.
2724(  3572) 03/05/2010 11:06:38  RTE E HP Service Manager is unable to start.
Failed to initialize or attach to shared memory environment
```

If the system cannot find any suitable memory ranges, it lists the following RTE error message:

```
RTE E No valid shared_memory_address parameter setting was found for a
shared memory size of nnnnnnnnnn (NNNN MB)
```

If there are no suggested shared memory parameters, you must reduce the amount of shared memory.

# Troubleshooting: “Unable to attach to shared memory. HP Service Manager may be damaged.” error (Linux only)

When executing Service Manager (SM) commands on Linux with a non-SM user account or using the crontab of an SM user account, an error occurs:

```
"Unable to attach to shared memory. HP Service Manager may be damaged."
```

Below is an example.

You have installed Service Manager with a specific account (adminsc4 - groups: adminsc4), and you have some verification processes that are scheduled and executed by another account (sdi - groups: dba and adminsc4). Since the group "adminsc4" is the same for both accounts, you are able to execute sm command lines as follows:

1. Connect to the SM server with the account "sdi".
2. Run the following command lines:

```
su -adminsc4
cd /soft/sc400/RUN
sm –reportshm
```

The above described error occurs.

## Rootcause

The system parameters in /etc/security/limits.conf of Linux control the resources that are available to a user or group, and may affect Service Manager's behavior. When certain parameter values defined for a Service Manager user or for the group to which the user belongs are too low, Service Manager may fail to execute commands or even fail to start the servlet.

Since a non-SM user may execute the "su" command to run shell with a substituted SM user, the resource control of the non-SM user may or may not affect Service Manager's behavior after the user substitutes the SM user, depending on the implementation of the Linux kernel.

## Workaround

HP recommends that you use a Service Manager user directly to perform any SM related operations on Linux.

If failures occur when starting an SM servlet or executing SM commands, you are recommended to check the parameters in /etc/security/limits.conf.

To do a diagnostic check:

1. Set a parameter in /etc/security/limits.conf to "unlimited".
2. Restart the system.
3. Perform the operation. If this solves the previous issue, the conclusion can be made that this limit parameter was set to a value that was too low and caused the failure.

To identify which parameter caused the problem, repeat the above steps for the parameters one by one until the problem is solved.

When the problematic parameter is identified, set it to a higher value appropriate to your Service Manager system. It is difficult to provide an accurate value for each parameter. The right value only depends on your system load. For this reason, you may need to repeat the step for each parameter and repeat until you get the correct value.

# Troubleshooting: Java buffer size errors occur when starting Service Manager (AIX only)

The following Java buffer size errors may occur in the `sm.log` file when starting Service Manager on AIX:

```
"Failed setting receives buffer size of 20000000 in
java.net.DatagramSocket@49ca49ca: java.net.SocketException: There is not enough
buffer space for the requested socket operation."
```

```
"Failed setting receive buffer size of 25000000 in
java.net.MulticastSocket@4bb04bb0: java.net.SocketException: There is not enough
buffer space for the requested socket operation."
```

## Rootcause:

The out-of-box value of the UDP receive buffer size (in bytes) in Service Manager is 20000000, which exceeds the maximum value (8388608) of sb_max on AIX.

## Workaround:

1. Go to the Service Manager server's RUN folder.
2. Open the following file in a text editor: {SM_SERVER_DIR}\RUN\udp.xml (in vertical scaling deployment mode) or {SM_SERVER_DIR}\RUN\udpcluster.xml (in horizontal scaling deployment mode).
3. Change these parameter values from:

   ```
   ucast_recv_buf_size="20000000"
   ```

   ```
   mcast_recv_buf_size="25000000"
   ```

   to a value less than or equal to 8388608, for example:

   ```
   ucast_recv_buf_size="8000000"
   ```

   ```
   mcast_recv_buf_size="8000000"
   ```

4. Restart the Service Manager server. The Jave buffer size warning messages will disappear.

# Troubleshooting: Common database errors

The following list contains the most common HP Service Manager errors encountered. For information on solutions to these database errors, see the related topics.

- Error message: `Cannot Find SQL Server, Error Connecting to servername.`
- Error message: `Corresponding join not defined.`
- Error message: `Error opening the Core.ir file in read mode.`
- Power outages and hardware failure.
- Slow query execution.

# Messages: Cannot Find SQL Server, Error Connecting to servername

Message: `Cannot Find SQL Server` and `Error Connecting to` *`servername`*

These generic connection failure messages indicate that the Run-time Environment (RTE) attempted to log in to HP Service Manager and either failed or received no reply. See the following list for common causes and possible solutions.

- The Service Manager server is not running.
  Ensure that the server is running and then attempt to connect using the Service Manager client.
- Your login information is incorrect.
  On failure, Service Manager prompts you to re-enter your login information. Ensure that you enter the correct case-sensitive login and password. For future login attempts, you can optionally modify program options to automatically set them to the correct information.
- The number of valid Service Manager licenses are already in use.
  Service Manager accepts a set number of concurrent users, depending on your license agreement. If all available licenses are in use, Service Manager rejects your login. Contact your Service Manager administrator to confirm the number of licenses available.

# Message: Corresponding Join Not Defined

Message: `Corresponding Join Not Defined`

This message indicates that the report is attempting to join multiple tables that have not been properly joined in the database.

When designing reports, linking tables using the application is not sufficient to create a join. You must also configure Service Manager with the equivalent values.

To join the tables:

1. Inspect the joined tables in your application. Arrows should connect to only the fields that you want to join between the tables.

2. Make an unload of both tables before making modifications so that you can return to the original configuration if needed.

3. Open Service Manager and compare the settings in the JOINDEF and ERDDEF tables to this linking scheme. You may need assistance from your administrator to confirm this task. Ensure that the following criteria apply:
   - The joins match exactly.
   - The join in Service Manager is unique, no other join connects the same tables in a different manner.
   - Stop, and then restart, the Service Manager server after creating the join.

**Note**: Modify the JOINDEF and ERDDEF tables in Service Manager with caution and only with prior approval from an administrator.

# Messages: Error opening the Core.ir file in read mode

Error message text: Error opening the Core.ir file in read mode

To correct the error and regenerate the IR indexes:

1. Click **Tailoring** > **Database Manager**.

2. Select **Administration mode**.

3. Type **core** in the Table Name field, and then click **Search**.

4. Select a record to edit.

5. Open the More Actions menu and choose **Regen**.

   **Note:** This option does not appear for files that contain no data records.

6. You are prompted to confirm this regen action.
   - Click **OK** to confirm this regen and erase all records in this file.
   - Click **Cancel** to cancel the regen.
   - Click **Schedule** (clock) to schedule the regen to perform at a designated time.

   **Note**: If you clicked **OK**, the regen performs immediately in the foreground. When completed, Service Manager displays a message confirming the time/date of the file regen and the removal of all records.

   **Note:** The asterisk (*) at the beginning of a message indicates there are additional messages related to this operation.

7. View all messages.
8. Read the messages and identify any errors that occurred during the operation.

# Troubleshooting: Database debug

You can add the debugdbquery parameter to the **sm.ini** file to allow the server to run the database debug utility. You can then use Microsoft Excel to sort the query results.

Examples:

- To show all database access, use the following syntax: `debugdbquery:999`.
- To show all queries that exceed *n* number of seconds, use the following syntax: `debugdbquery:n/`.

# Troubleshooting: Interpreting debugdbquery output

Output from the Database debug query parameter, debugdbquery, writes to the sm.log file. The messages written to the sm.log file contain several fields, each separated by a caret (^) character. The sm.log file is located in the following directory:

**..\..\HP\ Service Manager\Server\logs**

Sample debugdbquery 999 output to the sm.log file:

```
223 02/05/2007 17:39:51 DBFIND^F^scmessage(Oracle)
^1^0.000000^F^0^0.000000^“syslanguage=“en”
and class=“us” and message.id=“1””^ ^0.000000^0.000000 ( [ 0] apm.get.inbox.by.name
start )
223 02/05/2007 17:39:51 DBQUERY^F^probsummary(Oracle)
^18^1.000000^F^0^0.020000^“hot.tic#true”^
{“category”}^0.000000^0.000000 ( [ 0] sc.manage select )
```

The following table describes the output fields for the database debug query (debugdbquery) parameter.

| Field | Description |
|---|---|
| **who** | DBFIND or DBQUERY |
| **where** | F = foreground or B = background |
| **file** | The file name followed by database type: Oracle, DB2, SQL server or LDAP, or JOIN. If you add a letter *I* suffix, then the file name is case-insensitive. |
| **key** | The number of the selected key. If an asterisk character (*) follows the key number, Service Manager selected that key based on sort requirements, not query requirements. The system first uses a key that satisfies the sort criteria because a physical sort of the data is not required. |

| Field | Description |
|---|---|
| **weight** | The calculated weight for the key Service Manager selects for that specific query. For additional information, see the Key selection algorithms Help topic. |
| **keytype** | P = Partially keyed, I = IR expert search |
| **record count** | The number of records that satisfy the query. The system adds the DBQUERY entry to the log after processing the select panel and then returns the first 128 records that satisfy that query. |
| **seconds till result came back** | The amount of time required to satisfy the query. |
| **query** | The actual query from the user. |
| **sortfields** | The sort order in which the records are requested. |
| **extracttime** | The time required to read data records and extract the key values needed for sorting. This is only necessary if a key satisfying the requested sort order does not exist. |
| **sorttime** | The time required to sort all data records matching the query. This is only necessary if a key satisfying the requested sort order does not exist. |

# Troubleshooting: Power outages and hardware failure

Ensure that procedures are in place that provide continuous power in the event of a power outage or hardware failure. In the event of a power outage or hardware failure, transactions written to the log file are compromised and cannot be retrieved. If a backup process is running when the outage occurs, use your RDBMS tools to check the validity of the backup.

# Troubleshooting: Slow execution of queries

Slow query execution time is usually related to hardware and network limitations, or report design. After eliminating hardware or network limitations as a source of the slow response time, you can apply the following suggested tips to your report designs to speed execution:

- Limit the number of records kept in a database table, such as avoid saving several years of incident records in a single database table. The more records that are kept in a file, the larger the index is. The larger the index is, the slower queries run.
- Limit sorting layers. If the raw SQL contains more than two *ORDER BY* statements, the processing time increases. Each *ORDER BY* statement significantly increases execution time.
- Use joins instead of subreports. Although subreports are universal and allow greater portability over different servers, they execute SQL queries against the database one time for every record. For

example, a report with 100 records with a subreport in the Details section executes 101 SQL statements. A joined report of equivalent size executes only once.

- Use indexes where possible. Typically, the Unique key of any table is already indexed; however, in a join, placing a key on the field used to join the two tables dramatically increases the speed to execute. Add indexes only with the guidance of your HP Service Manager administrator. Adding too many indexes to a Service Manager table can affect performance.

# Troubleshooting: Connecting to Oracle

Service Manager supports Oracle 10.2 or later, Oracle 11.2.0.2 or later is preferred. For HP Service Manager details, see HP Support matrices on the Software Support Online site.

If you try to connect Service Manager with Oracle 10.1 or earlier, Service Manager will behave as follows:

- If you use the Configuration tool during the installation, then the configuration tool will fail on "Verify Connection", and error messages will be displayed in the `smconfig.log` file.
- If you set your connection parameters by hand and then start Service Manager as Windows Service, the Service Status shows Started, but there will be error messages in the `sm.log` file, and clients will not be able to connect.
- If you set your connection parameters by hand and then start Service Manager from the operating system command prompt, then here will be error messages in the `sm.log` file for Windows and the `smconfig.log` file for UNIX.

The following messages in `smconfig.log` or the `sm.log` files indicate that you are trying to connect your HP Service Manager server to an Oracle database, version 10.1 or earlier.

On Windows systems

```
RTE E Could not load DLL sqoracle.oci10.DLL
RTE E Error 127 in call LoadLibrary - The specified procedure could not be found.
RTE E Failed to load library 'sqoracle.oci10.DLL'
RTE E Failed to load SQL client shared libraries, terminating.
```

On Unix systems

```
RTE I Command line: /<ServiceManager_install_directory>/RUN/smserver  -
sqlverifyconnection -log:<path to log files>smconfig.log
RTE E Could not load shared library ./sqoracle.oci10.so
RTE E   ld.so.1: smserver: fatal: relocation error: file ./sqoracle.oci10.so:
symbol OCIClientVersion: referenced symbol not found
RTE E Could not load shared library sqoracle.oci10.so
RTE E   ld.so.1: smserver: fatal: relocation error: file / <ServiceManager_install_
directory> /RUN/sqoracle.oci10.so: symbol OCIClientVersion: referenced symbol not
found
RTE E Failed to load library 'sqoracle.oci10.so'
RTE E Failed to load SQL client shared libraries, terminating.
```

# Troubleshooting: lister

Use the following procedure to troubleshoot lister:

1. Verify lister status and configuration.
2. Regenerate obsolete lists.
3. Rebuild every list in the system.

**Note**: This procedure assumes you have properly modified and linked your forms.

# Troubleshooting: ODBC error when running Crystal Reports

Crystal Reports cannot sort on fields that contain SQL reserved words such as `group`. If you receive an ODBC error when running a sort operation in Crystal Reports, then one of the fields in your query contains a SQL reserved word. Review the SQL query and identify any fields that contain a SQL reserved word. For example, you will receive an error if you attempt to sort on the field `cm3rm1.group` because it contains the SQL reserved word `group`.

To fix the error, you can create an alias field in the database dictionary to remove the SQL reserved word. For example, you can create the alias field `cm3rm1.group_alias` that is an alias of the original field `cm3rm1.group`.

# Troubleshooting: Knowledge Management

This section provides some basic information about anticipating and correcting issues related to Knowledge Management. Some of these issues include:

- Difficulties displaying all of the buttons when a display screen uses a resolution setting of 1024x768
- Providing the correct path information for the search engine when it is installed on a separate server

# Troubleshooting: Cannot support true multilingual capabilities when using Microsoft SQL server

Microsoft SQL Server does not offer a UTF-8 code page. Regular data types, such as VARCHAR, CHAR, or TEXT use single-byte code pages (such as, Microsoft Windows 1252) or double-byte code pages (such as Shift-JIS), but they cannot hold characters out of multiple regions. Microsoft SQL Server uses a specific collation per language and allows one collation per database. For example, if you set collation for Chinese, you cannot store Japanese characters in the database.

**Note:** This is not a problem for Oracle or DB2, since they are plain UTF-8 based.

### Workaround

**Example**: Shift-JIS allows you to store English and Japanese characters, but not Cryllic or Portuguese characters. On the other hand, Microsoft Windows 1251 allows you to store Cryllic characters, but not Japanese. If you have a requirement to store special characters from many different languages, you should use the Microsoft SQL Server data types NVARCHAR, NCHAR, or NTEXT instead of VARCHAR, CHAR, or TEXT. These data types use UTF-16 as a code page and, therefore, are capable of storing special characters from many different languages.

**Caution:** Be careful to use these data types only for fields that should be localized, and not for fields that will only use English characters, as they take up twice as much storage space. Also, Microsoft SQL Server has a limitation of 8060 bytes per row in a single table.

## Troubleshooting: Problems viewing buttons

For some monitors, when the display screen is set to 1024x768 resolution, the toolbar buttons preview, approve internal, and submit for approval do not appear on the toolbar. Also, the buttons in the toolbar of the Contribute Document form do not fit properly on the toolbar. They overlap.

### Workaround

On the affected forms, the drop-down option menu has the buttons available.

## Troubleshooting: Event Services

The problems and solutions described in the troubleshooting section provide some assistance with configuring and using Event Services. In some cases the problem described may not match exactly the problem you are experiencing, but your problem may be exhibiting similar symptoms. In these case parts of the solutions described may be useful in resolving the issue you are having.

## Troubleshooting: Having incident events processed separately

Can I have my incident events processed separately, so they are not held up by other events?

1. Copy the event agent to a new agent called (for example) probevent.
2. Copy the associated info record, substituting probevent for event.

3. Modify the query field for the event agent to read `evtype~#"pm"`.
4. Modify the query field for the probevent agent to read `evtype#"pm"`.

# Troubleshooting: Sending test notifications to external programs after installing SCAuto

To send a test notification of a new device to my external program after installing SCAuto:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Write an Output Event**.
2. Select Configuration Management.
3. Click **Write Event**.
4. Note the event type.
5. Click **Queues > Output Event**.
6. Search for an event with a event code of `icma`.

   The Event Services Output Queue should include the test item you generated.

# Troubleshooting: No problems opening with pmo records in Event Input queue

Why are no problem records opening, even though there are pmo records in the Event Input queue?

To troubleshoot this problem:

1. Verify the records in the queue have processed. If the records have processed, there should be no Event Time value.
   - The Status field should contain a value.
   - Any messages should appear in the Messages field.
2. Verify there is an active event agent.
   - In the event agent, the Stop button should be enabled and a start time and an idle time should appear.
   - Click the Refresh button to reset the idle time to 00:00:00. It should begin increasing again.

- If the Start button is enabled and there is no start and idle time, click Start and wait until the problem agent recycles.

3. Verify the following, and then wait for the event processor to recycle:
   - The event schedule record exists.
   - The Class field has a value of event.
   - The Status field has a value of rescheduled.
4. If there is an active event agent, check the Event Registration table.
   - Are there entries for Event pmo with a Type of input?
   - Is the Execute Condition true?
   - Verify the content of the pmo registration.
5. Verify there are event maps matching the Event Map Name values in the registration record. The same rules apply to all event types, not just pmo.
6. Verify that you have provided an active category

# Troubleshooting: Not receiving email after opening a problem

Why am I not receiving email even after installing HP Service Manager and opening a problem?

To troubleshoot this problem:

1. Verify you are a member of the assignment group for the problem. If not, you will not receive notification of any kind.
2. Determine whether you are attempting to send email to yourself when you open a problem. HP Service Manager does not send email to the individual who is opening, updating or closing a problem, regardless of their membership in the assignment group.
3. Log on to HP Service Manager as someone else.
4. Open a new problem.
5. Determine whether the operator to whom you are sending email has an email address specified in his or her operator record.
6. Ensure it is correct.
7. Check the Message Class file for External Email records.
8. Is there one for problem open?

9. If not, add one.
10. Verify there are records in the event output queue with a type of email.
11. If so, determine whether the scemail agent or another email agent is active.

    Use Agent Status to:

    - Check that in the event agent, the Stop button should be enabled, and a start time and an idle time should appear.
    - Click the Refresh button to reset idle time to 00:00:00. It should begin increasing again.
    - If the Start button is enabled and there is no start and idle Time, click Start and wait until the problem agent recycles.
12. Determine if there is an output type event registration record for email.
13. If the SCEMAIL agent or another email agent is active and you still do not receive mail, stop the agent.
14. Open a problem and check the event output queue for new events with a type of email.
15. If a new email event is added to the queue, restart the SCEMAIL agent or another email agent. When the email has been sent, the event is deleted only if the `keepmail` parameter is turned off.

**Note:** Always check the HP Service Manager Message Log and any external log files for errors. All SCAutomate errors are logged with a class of `event management errors`.

# Troubleshooting: Sending email only when opening emergency problems

How can I only send email when I open problems with a priority code of emergency?

To solve this problem:

1. Click **Tailoring** > **Notifications** > **External Email Message Class**.
2. Remove any External Email record for problem open.
3. Click **Tailoring** > **Tailoring Tools** > **Macros**.
4. Select the incidents macro that sends the email.
5. Change the Condition field value to:
   `nullsub(priority.code in $L.new, "")="1"`

# Troubleshooting: Setting the category for incidents opened using email

How do I set the category for my message when I am opening problems via email?

1. Put each field assignment on a separate line in your mail message, uniquely identified by a label.
2. Use mapping expressions to extract the information and populate the appropriate fields in the incident.

   ```
   The mail message looks like this:
           Fri, 12 Jan 05 14:40:41 -08:00
           Re: Test to assign a category
           John Jones <john@mac.acme.com>
           CATEGORY: example
           This is line 1 of the text of mail.
          This is line 2 of the text of mail.
   ```

3. In the eventin record, the `evfields` should appear as follows:

   ```
   xjohn^^^^Fri, 12 Jan 01 14:40:41 -08:00|Re: Test to assign a
   category|John Jones<john@hp800.hp.com>|CATEGORY:
   example||This is line 1 of the text of mail.|This is line 2
   of the text of mail.|^^^^^^^^^^^^^John Jones
   <john@mac.acme.com>^^
   ```

4. In the problem open event map record for the category field, enter the following Initialization statements:

   ```
   $axtype=type in $axces.target
   if (index("axmail", evuser in $axces)>0) then $axtype=type
   in $axces.target
   if (index("axmail", evuser in $axces)>0) then
   ($ax.action=denull(action in $axces.target);$axl=lng($ax.action))
   if (index("axmail", evuser in $axces)>0) then for $axpos = 1 to $axl
   do ($axt=$axpos in $ax.action;if $axt#"CATEGORY
   then ($axtype=substr($axt, 10, lng($axt) - 9);
   $ax.action=delete($ax.action, $axpos);
   action in $axces.target=$ax.action))
   ```

5. Then enter these Instructions:

   ```
   if (index("axmail", evuser in $axces)>0) then category in
   $axces.target=$axtype
   cleanup($axtype);cleanup($axt);cleanup($axpos);cleanup($axl)
   cleanup($ax.action)
   ```

This procedure (substituting other field names) allows specification of any incident field values within the body of the email message as long as the map record in which the instructions are entered has a higher sequence number than that of the action (or `update.action`) field.

# Troubleshooting: Testing fax message transmission

To verify that the system is sending a fax message:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Send a FAX**.
2. Create a sample message.
3. Click the **Send FAX** button.
4. Click **Queues > Output Events**.
5. Type fax for Event Code and click **Search**.
6. Review the event output queue.

# Troubleshooting: Verify mail sent to myself was received

How do I know that mail sent to myself was received?

To troubleshoot this problem:

Click **Mail > All Mail**.

Your message should appear in the list of email messages.

# Troubleshooting: Sending test reports to external programs after installing SCAuto

To test sending an incident report to my external program once SCAuto/SDK is installed:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Write an Output Event**.
2. Select Incident Management.
3. Click **Write Event**.
4. Note the incident number.
5. Click **Queues > Output Event**.

6. Search for an event with a event code of `pmo`.

   The Event Services Output Queue should include the test incident report you generated.

# Troubleshooting: Verify that the SCAuto Pager installed

To quickly test whether the SCAuto Pager is properly installed:

1. Click **System Administration** > **Ongoing Maintenance** > **Communication Utilities** > **Send a Page**.
2. Create a sample page message.
3. Click the **Page** button.
4. If you are not paged within a minute or two, ensure the SCAUTO agent is active. Use the following procedure to do so:

   Click the **Status** button on the HP Service Manager main menu to verify that there is an entry in the User Name column for SCAUTO.
5. If SCAUTO is not active, you can start it if you are running an express client or are logged on from the server using HP Service Manager.
   - Click **Start Scheduler**.
   - Click the entry for `scauto.startup`.
6. If the SCAUTO agent is active and you still do not receive a page:
   - Stop (kill) the agent, by placing a lowercase letter `k` in the command column beside agent.
   - Click **Execute Commands**.
   - Send a new page and check the event output queue for new events with a type of page.
7. If a new page event is added to the queue, restart the SCAUTO agent.

   After the page is sent, the event is deleted if the `-d` flag is set or updated.

# Troubleshooting: clients

This section provides some basic information about how to anticipate and correct issues related to the web client. This includes the following issues:

- Workflow diagrams are not displayed when Service Manager is accessed from the web client
- Cannot automatically log in to Service Manager from the web client
- The imageCapture application does not run in the MySM home page
- Unable to view an attachment from the web client

# Troubleshooting: workflow diagrams are not displayed in the web client

Workflow diagrams cannot be displayed when HP Service Manager is accessed from the web client.

Per Federal Desktop Core Configuration (FDCC) restrictions, the Java applet is not allowed to run in Internet Zone. Follow either of these two solutions to solve this issue:

**Note:** The solutions described in the following section provide some assistance with configuring Internet Explorer security settings and Java permissions on a single computer only. To apply the solutions to multiple computers, the system administrator should manage to perform batch operations.

**Solution 1: Add the address of the web client to the Local intranet Zone setting or the Trusted sites Zone setting (recommend)**

Per FDCC restrictions, the security settings of Internet Explorer are locked by default and the users cannot change these settings.

Follow these steps to unlock and change the Internet Explorer security settings:

1. Log on to the computer as a local administrator.
2. Open the Windows command prompt.
3. Type the following command and press Enter to open the Group Policy window:

   **gpedit.msc**
4. Double-click **Computer Configuration** > **Administrative Templates** > **Windows Components** > **Internet Explorer**.
5. Double-click **Security Zones: Do not allow users to change policies** and select **Not configured**.
6. Click **Apply**, and then click **OK** to close the window.
7. Double-click **Security Zones: Do not allow users to add/delete sites**, and then select **Not configured**.
8. Click **Apply**, and then click **OK** to close the window.

9. (For Windows Vista only) Double-click **Security Zones: Use only machine settings**, and then select **disabled**.
10. Close the Group Policy window.
11. (For Windows Vista only) Restart Vista.
12. Start Internet Explorer. Select **Tools** > **Internet Options**.
13. On the **Security** tab, select **Local Intranet** or **Trusted sites**, and then click the **Sites** button to open the Trusted sites window.
14. Add the address of the web client to the list. Click **OK** two times to close the Internet Options window.
15. Refresh the web client login page. Log in to Service Manager again by using the web client.

**Note:** After adding the web client to the trusted sites list, revert the security configurations in step 4 and step 6.

**Solution 2: Allow Java Applets to run in Internet Zone**

Follow these steps to allow Java Applets to run in Internet Zone:

1. Log on to the computer as a local administrator.
2. Open the Windows command prompt.
3. Type the following command and press Enter to open the Group Policy window:

   **gpedit.msc**
4. Double-click **Computer Configuration** > **Administrative Templates** > **Windows Components** > **Internet Explorer** > **Internet Control Panel** > **Security Page** > **Internet Zone**.
5. Double-click **Java Permissions**. In the window that opens, select **Enabled**.
6. Select **High safety** in the Java permissions drop-down list.
7. Click **Apply**, and then click **OK** to close the window.
8. Close the Group Policy window.
9. (Optional) For domain computers, run the **gpupdate /force** command or wait for 10 minutes.
10. Restart Internet Explorer.

# Troubleshooting: web client fails to automatically log in to Service Manager

Trusted sign-on (TSO) uses the current user's domain login name and password to log on. In the Internet Explorer security setting, only the Local intranet and Trusted sites security zones allow automatic logon.

However, the HP Service Manager web server is probably not identified as a local intranet or trusted site.

Refer to **Solution 1** in "Troubleshooting: workflow diagrams are not displayed in the web client" on page 28 to solve this issue.

# Troubleshooting: imageCapture does not run in the MySM home page

Per FDCC restrictions, Java applets are not allowed to run in the Internet Zone.

Refer to the solutions that are described in "Troubleshooting: workflow diagrams are not displayed in the web client" on page 28 to resolve this issue.

# Troubleshooting: unable to view an attachment from the web client

Why can I not open an attachment in a record (for example, an incident record) from the web client?

The **getAbsolutePath()** function in Attachment.java returns the full paths of attachments. The web tier supports long full paths (greater than 255 characters) for attachments when running on Linux, Unix, or Windows with an NTFS file system (not a FAT file system).

If the web tier is running on Windows with a FAT file system, and if the attachment file full path is greater than 255 characters, you cannot open the attachment. This issue is most likely to occur on WebSphere systems where the deployment path to the temp directory is prefixed by various WebSphere node name and server names, and attachment file full paths are dependent on the length of WAR file name and the installation path of the web application server.

The following is an example of a full path to an attachment that is greater than 255 characters, where the "x" string represents the unique directory created for each user session that handles attachment files:

```
/app/IBM/WebSphere7/AppServer/profiles/AppSrv01/temp/qasolaris01Node01/server1/PRO
D_webtier-7_02_013_P3_ear_SSO_HELP_SRVRPROD_webtier-7_02_013_P3_ear_SSO_HELP_SRVR_
```

```
war/PROD_webtier-7_02_013_P3_ear_SSO_HELP_SRVRPROD_webtier-7_02_013_P3_ear_SSO_
HELP_SRVR.war/attachments/xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx/sm_attachment.txt
```

**Note:** If you use a very long file name or folder name, which causes the full path of the file to exceed 255 bytes, you will not be able to delete the web application server's temporary file/folder that is generated when you upload the file (normally, this is located in the web application server installation directory). Deleting the temporary file/folder will fail with a system warning message that states the file name is too long. In this case,follow these steps to delete the file:

1. Rename the temporary file to a short name, and then delete it.
2. If the deletion still fails, open the system command prompt, type `dir /x` to display the file's short name, and then run the **rmdir {short name} /S** command to delete the folder.

# Contact HP support

Visit the HP Software Support Online web site at: **http://www.hp.com/go/hpsoftwaresupport**

This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

- Search for knowledge documents of interest
- Submit and track support cases and enhancement requests
- Download software patches
- Manage support contracts
- Look up HP support contacts
- Review information about available services
- Enter into discussions with other software customers
- Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport ID, go to:

**http://h20229.www2.hp.com/passport-registration.html**

To find more information about access levels, go to:

**http://h20230.www2.hp.com/new_access_levels.jsp**

**HP Software Solutions Now** accesses the HPSW Solution and Integration Portal Web site. This site enables you to explore HP Product Solutions to meet your business needs, includes a full list of Integrations between HP Products, as well as a listing of ITIL Processes. The URL for this Web site is **http://h20230.www2.hp.com/sc/solutions/index.jsp**

# HP Service Manager Doctor

HP Service Manager Doctor enables support engineers to collect configuration and diagnosis data from Service Manager. This tool eliminates the need of excessive exchanges of emails between support engineers and customers before engineers can have all needed information to analyze a reported incident.

This tool collects these types of information:

- SM server configurations and reports
- Operating system configurations
- Database configurations on the database server
- Service Manager server logs
- List of files in the `%SM_HOME%RUN`, `%SM_HOME%RUN/lib/endorsed`, and `%SM_HOME%RUN/lib` folders
- Additional configurable data collected by third-party tools, such as `supportTool.sh` and `generateSchema.sql`

# Introduction

Service Manager Doctor enables support engineers to collect configuration and diagnosis data from Service Manager. This tool eliminates the need of excessive exchanges of emails between support engineers and customers before engineers can have all needed information to analyze a reported incident.

# Target audiences

- Service Manager customers
- Service Manager support engineers

# Supported platforms

This tool supports platforms that are allowed in the Service Manager server compatibility matrix. For details, see HP Support matrices on the Software Support Online site.

# Supported Service Manager versions

7.1x and 9.x

# Modes

The Service Manager Doctor Tool can run in two modes:

- Command-line
- Graphic user interface (only on Windows)

# Running Service Manager Doctor

Run the following command in the smdoctor folder directly under the server installation directory to start the tool in GUI mode (only for Windows):

```
smdoctor_gui.bat
```

Run one of the following commands in the smdoctor folder directly under the server installation directory to start the tool in command-line mode:

`smdoctor.bat` (for Windows)

`smdoctor.sh` (for UNIX/Linux)

When running Service Manager Doctor commands with logging enabled, the tool generates a `SMDoctor_Report_<hostname>.html` and `SMDoctor_Report_<hostname>.txt` logs in the current directory, where *<hostname>* is the host name of the Service Manager server. For example: `run -all -dlog` or `run -all -zip`.

# Product Overview

This section describes the usage of the Service Manager Doctor Tool.

# Information collected

This tool collects thefollowing types of information:

- SM server configurations and reports
- Operating system configurations
- Database configurations on the database server
- Service Manager server logs
- List of files in the `%SM_HOME%RUN`, `%SM_HOME%RUN/lib/endorsed`, and `%SM_HOME%RUN/lib` folders
- Additional configurable data collected by third-party tools, such as `supportTool.sh` and `generateSchema.sql`.

# GUI mode

Follow these instructions when running the Service Manager Doctor Tool in GUI mode.

## Service Manager Doctor Main window

The GUI mode of the Service Manager Doctor Tool allows you to easily perform a full health check with a simple click and then it displays a detailed health report in a new window. Additionally, you can use the Actions menu item to save certain files from the Service Manager server, including these options:

- `sm.ini`
- `sm.cfg`
- Service Manager logs
- List of files in the `%SM_HOME%RUN` folder
- List of files in the `%SM_HOME%RUN/lib` folder
- List of files in the `%SM_HOME%RUN/lib/endorsed` folder
- `Iwssofmconf.xml`

- SM client configuration
- `licfile.txt`
- `udp.xml`
- `udpcluster.xml`
- All these types of information (available with a “Save all above items” option)

In a complex, vertically-scaled configuration, the Service Manager Doctor Tool parses the `sm.ini` and `sm.cfg` files to locate all possible logs that are scattered on the server and packages them into a zip file.

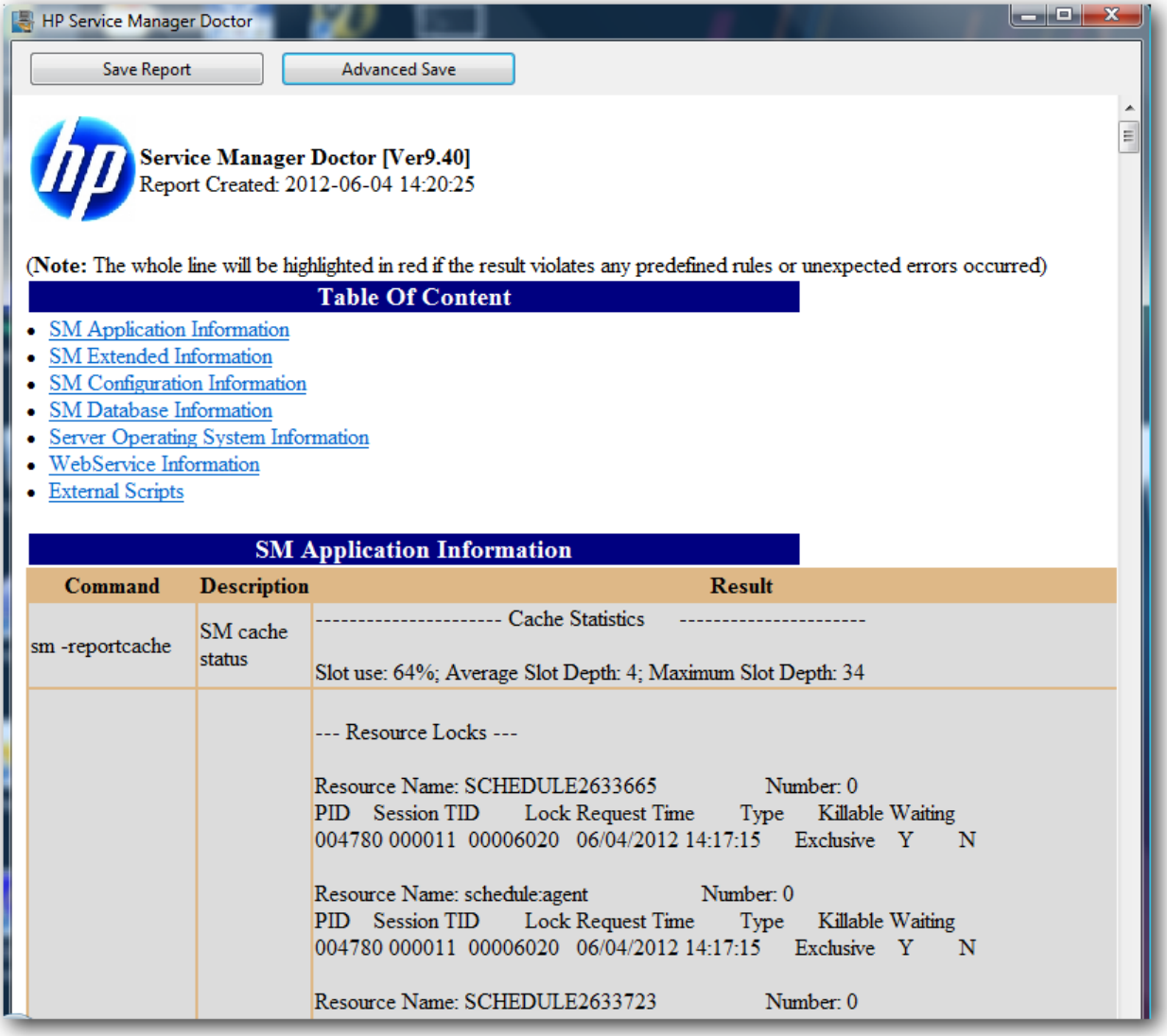
You can click **Health Check** to perform health check multiple times. The latest report overwrites previously generated reports. However, the right pane of the main console window displays all check history.

The Service Manager Doctor Main window is shown in the screenshot below:

HP Service Manager Doctor
Action Option Help
Data collection has started, it will take a few minutes to complete.
Running...os -diskspace job successfully finished.
Running...os -process job successfully finished.
Running...esm -apptablemerge job finished with error.
[100023]M2/M3 tables exist for cm3t ,table merge is needed.
Running...os -openfile job successfully finished.
Running...os -sharedmemory job successfully finished.
Running...os -ip job successfully finished.
Running...os -ipcs job successfully finished.
Running...esm -appbp job finished with error.
[100021]Best practice information is not available. (The table does not exist)
Running...os -udpbuffer job successfully finished.
Running...esm -apppatch job finished with error.
[100021]Patch information is not available. (The table does not exist)
Running...esm -apphotfix job finished with error.
[100021]Hotfix information is not available. (The table does not exist)
Running...conf -env job successfully finished.
Running...conf -dbtype job successfully finished.
Running...conf -dbinst job successfully finished.
Running...esm -port job successfully finished.
Running...esm -keystore job successfully finished.
Running...esm -pingclusternodes job successfully finished.
Running...db -list job successfully finished.
Running...esm -perf job successfully finished.
Running...esm -autopass job successfully finished.
Running...db -timezone job successfully finished.
Running...db -schema job finished with error.
[100039]This command is limited to Oracle
Running...db -info job successfully finished.
Running...db -version job successfully finished.
Running...esm -javaversion job successfully finished.
Running...esm -appfieldmigration job successfully finished.
Running...esm -apprecordcount job finished with error.
[100022]The record count in table STATHISTORYM1 exceeds threashold 10000 , purge/archive is needed.
HP Service Manager Software
Enterprise Service Management
© Copyright 2004 - 2010 Hewlett-Packard Development Company, L.P.
Diagnostic Actions
Used for Support Purpose
Automatically Collect Service Manager Data
Automatically Validate Service Manager Configuration
Health Check
Details

## Report window

The GUI mode shows the report in the Report window:


HP Service Manager Doctor
Save Report
Advanced Save
Service Manager Doctor [Ver9.40]
Report Created: 2012-06-04 14:20:25
(Note: The whole line will be highlighted in red if the result violates any predefined rules or unexpected errors occurred)
Table Of Content
SM Application Information
SM Extended Information
SM Configuration Information
SM Database Information
Server Operating System Information
WebService Information
External Scripts
SM Application Information
Command
Description
Result
sm -reportcache
SM cache status
---------- Cache Statistics ----------
Slot use: 64%; Average Slot Depth: 4; Maximum Slot Depth: 34
--- Resource Locks ---
Resource Name: SCHEDULE2633665 Number: 0
PID Session TID Lock Request Time Type Killable Waiting
004780 000011 00006020 06/04/2012 14:17:15 Exclusive Y N
Resource Name: schedule:agent Number: 0
PID Session TID Lock Request Time Type Killable Waiting
004780 000011 00006020 06/04/2012 14:17:15 Exclusive Y N
Resource Name: SCHEDULE2633723 Number: 0

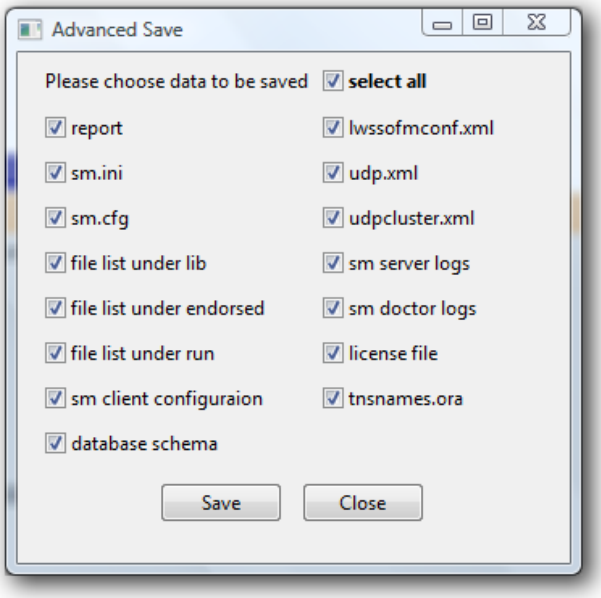
## Advanced Save window

Advanced Save allows you to select specific data that you want to save. By default, all the items are selected. You can select the **select all** check box on the **Advanced Save** dialog box to select or clear all the items.

The Advanced Save option is available only after you run a health check. Additionally, the **report** and **sm doctor logs** save items are available only on the **Advanced Save** dialog box.

> **Note:** If the total size of the server logs is too large for shipping, you can check a few items each time and save the log files in several small zip packages.

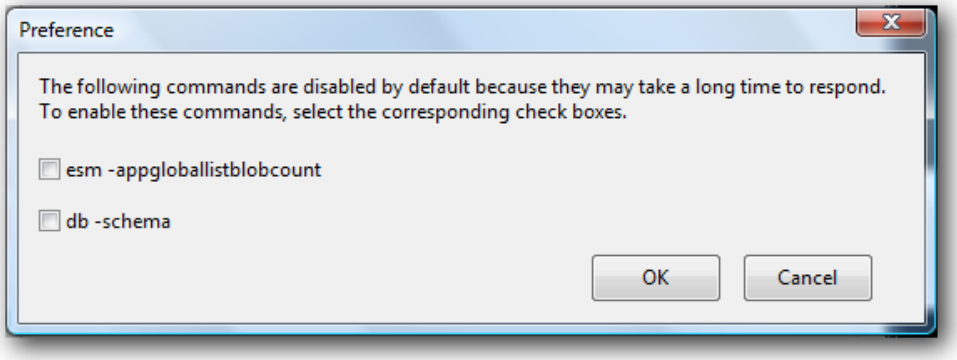
The Advanced Save window is shown in the screenshot below:




## Preference dialog box

The `esm -appgloballistblobcount` and `db -schema` commands are disabled by default because they may take a long time to respond. Each of these commands could take more than 10 minutes, depending on the actual environment. You can enable these commands by selecting the corresponding check boxes in the **Preference** dialog box.

The Preference dialog box is shown in the screenshot below:

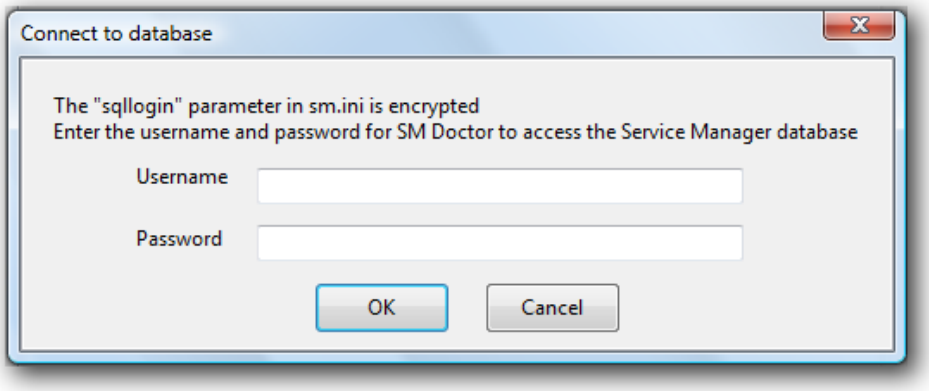

Preference
The following commands are disabled by default because they may take a long time to respond.
To enable these commands, select the corresponding check boxes.
esm -appgloballistblobcount
db -schema
OK
Cancel

**Note:** In command-line mode, you can run `set -globallistcheck 1` and `set -schemacheck 1` to enable these commands.

## Connect to Database dialog box

Service Manager Doctor prompts you for the username and password of the Service Manager database if the `sqllogin` parameter is encrypted in the `sm.ini` file.

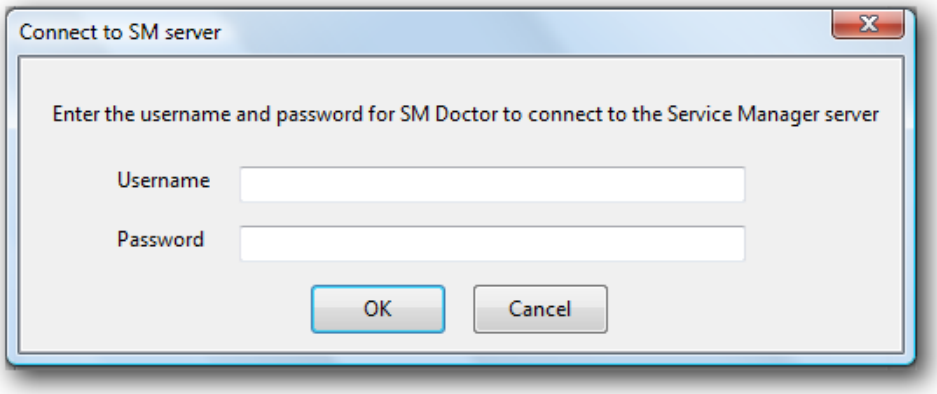
The Connect to Database dialog box is shown in the screenshot below:


Connect to database
The "sqllogin" parameter in sm.ini is encrypted
Enter the username and password for SM Doctor to access the Service Manager database
Username
Password
OK
Cancel

## Connect to SM Server dialog box

Service Manager Doctor prompts you for the username and password of the Service Manager server if the `esm -appgloballistblobcount` command is enabled.

The Connect to SM Server dialog box is shown in the screenshot below:




# Command-line mode

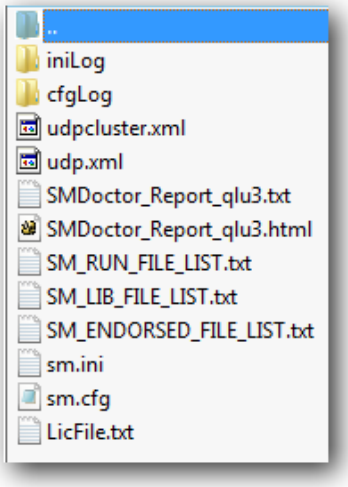
The command-line mode of the Service Manager Doctor Tool allows you to run the tool more flexibly. You can run specific commands or command groups to collect certain types of information. You can also choose to type "run -all -zip" to package all data that is collected in the current directory. Eventually, the command-line mode generates `SMDoctor_Report_<hostname>.html` and `SMDoctor_Report_<hostname>.txt` logs in the current directory, where <*hostname*> is the host name of the Service Manager server.

The Command-line mode is shown in the screenshot below:

```
********  Welcome to Service Manager Doctor  ********
******              Version 9.40               ******
****                                             ****
****         run -all : run all commands         ****
****           help : show all commands          ****
****           exit : close SM Doctor            ****
****                                             ****
******    Copyright (c) 2011 HP Corporation    ******
********        All rights reserved          ********
>help
*** Note: "run -all -zip" collects and zips all data to sm_doctor_saved.zip to current directory ***

Usage: db [command option] [command option] [...]
  Options:
    -all        Run all db commands
    -dlog       Log the command running results, please use this option with other options when results are returned
    -help       Help information for db commands
    -info       Database server information
    -list       Database list
    -schema     Database table/index schema
    -timezone   Database server timezone
    -version    Database server version

Usage: esm [command option] [command option] [...]
  Options:
    -all                              Run all SM extended commands
    -appbp                            SM app best practice information
    -appfieldmigration(-appfm)        SM app table field check
    -appgloballistblobcount(-appgl)   SM app globallists valuelist length
    -apphotfix                        SM app hotfix information
    -apppatch                         SM app patch information
    -apprecordcount(-apprc)           SM app table record count
    -apptablemerge(-apptm)            SM app table merge check
    -autopass                         SM server autopass version
    -dlog                             Log the command running results, please use this option with other options when
    -help                             Help information for SM extended commands
    -javaversion                      SM server java version
    -keystore                         SM certificate check
    -perf                             SM process CPU and memory information
    -pingclusternodes(-ping)          Ping other sm nodes in current cluster
    -port                             SM server port status

Usage: conf [command option] [command option] [...]
  Options:
    -all     Run all conf commands
    -cfg     sm.cfg content
    -dbinst  SM database server instance
    -dbtype  SM database server type
    -dlog    Log the command running results, please use this option with other options when results are returned
    -env     System environment settings
    -help    Help information for conf commands
    -ini     sm.ini content
```

**Note:** If the `sm_doctor_saved.zip` file generated in command-line mode is too large for shipping, you can unzip the package and repackage them into smaller zip packages.

The `sm_doctor_saved.zip` file has the following folder structure:



# Command References

This section describes the usage of commands when you are running the Service Manager Doctor Tool in command-line mode. The command-line mode of Service Manager Doctor provides 10 groups of commands. When you try to run an invalid Service Manager Doctor command, the command-line mode returns an error message. For more information, see "Error References" on page 60.

## Service Manager Runtime commands (sm)

Service Manager Runtime commands allow you to run regular Service Manager commands in the Service Manager Doctor Tool. Therefore, you can use this command-line mode as a command-line console, except that it provides tool-specific commands. For example, you can run `sm -reportcache -reportlocks` to check both the cache and locks in one single command.

We do not recommend that you run commands that require options or that return no command results, such as `sm -version -log:version.txt` and `sm -httpport:XXX`.

The timeout for Service Manager Runtime commands is 50 seconds.

| Option | Description | Usage |
|---|---|---|
| -reportstatus | Retrieves the Service Manager status. | sm -reportstatus |
| -reportlbstatus | Retrieves the Service Manager load balancer status. | sm -reportlbstatus |
| -reportcache | Retrieves the Service Manager cache data. | sm -reportcache |
| -reportipc | Retrieves the semaphore data. | sm -reportipc |
| -reportlocks | Retrieves the lock status. | sm -reportlocks |
| -reportlic | Retrieves the Service Manager license status. | sm -reportlic |
| -version | Retrieves the Service Manager version.<br><br>**Note:**<br>• Always available regardless of whether the Service Manager service is running or not.<br>• Currently supports the reporting of versions 7.1x and 9.30 | sm -version |
| -appversion | Retrieves the Service Manager application version. | sm -appversion |

| Option | Description | Usage |
|---|---|---|
| -sqlverifyconnection | Verifies the database connection. | sm -sqlverifyconnection |
| -reportshm | Retrieves the Service Manager shared memory. | sm -reportshm |
| -reportsem | Retrieves the Service Manager semaphore. | sm -reportsem |
| -all | Runs all Service Manager Runtime commands at one time and returns the results in the output. | sm -all |
| -help | Displays Help information.<br><br>**Note:** If the -help option is used together with other options, only Help information is returned. | sm -help |
| -dlog | Outputs the command result to html and txt files. | sm -all -dlog |

**Note:** The `sm` commands listed in the table above, except the `-all`, `-help`, and `-dlog` options, are enabled by default and will be run when you run the `sm -all` or run `-sm` command. These `sm` commands are defined in the `CmdOnDemand.xml` file. You can edit this file to enable additional commands to be run. The `CmdOnDemand.xml` file can even include commands to launch external diagnostic tools. For example, the Service Manager Doctor tool is shipped with a shell script tool (`supportTool.sh`), which collects diagnostic information, such as stack traces of core system files, logs, and configuration files, and saves it in a `$HOSTNAME_smsupport.tar` file. See "CmdOnDemand.xml" on page 55 for more information.

# Extended Service Manager commands (esm)

Extended Service Manager commands return Service Manager specific information that the current Service Manager Runtime commands may not return but is helpful for diagnosis.

The timeout for Extended Service Manager commands is 60 seconds.

| Option | Description | Usage |
|---|---|---|
| -javaversion | Retrieves the Java runtime environment version of the Service Manager server (the JRE version in the Service Manager RUN directory) | esm -javaversion |
| -apppatch | Retrieves Service Manager application patch information (in the `patchrelversioninfo` table). | esm -apppatch |
| -apphotfix | Retrieves Service Manager application hotfix information (in the `patchrelversioninfo` table). | esm -apphotfix |

| Option | Description | Usage |
|---|---|---|
| -appbp | Retrieves Service Manager Best Practice information (in the `bpreleaseinfo` table). | esm -appbp |
| -port | Retrieves Service Manager server ports (as returned by the 'netstat' command). | esm -port |
| -perf | Retrieves Service Manager process CPU and memory information (as returned by the following system-specific commands).<br>• Windows: tasklist<br>• Linux: top -p<br>• Unix: ps -p) | esm -perf |
| -autopass | Retrieves the Service Manager autopass version.<br>Pre-9.20:<br>`…\Hewlett-Packard \HPOvLIC\About.txt`<br>9.20 and later:<br>The `AutoPassJ*.jar` version | esm -autopass |
| -apprecordcount | Retrieves the record count for Service Manager tables:<br>• syslog<br>• stathistory<br>• eventin<br>• systemperform<br>• systemtotals<br>• clocks<br>• activity<br>**Note:** The threshold for validation is 10 KB. | esm -apprecordcount |
| -apptablemerge | Retrieves Service Manager table merge information, such as whether `M2` or `M3` tables exist for the `cm3r`, `cm3rpage`, `cm3t`, and incidents tables. | esm -apptablemerge |

| Option | Description | Usage |
|---|---|---|
| -appfieldmigration | Retrieves information about certain fields:<br>• The “approval” and “members” fields in the `cm3groups` table.<br>• The “related_cis” field in the `cirelations` table. | esm -appfieldmigration |
| -appgloballistblobcount | Retrieves the length of the Service Manager application globallists value list.<br>**Note:** The threshold for validation is 1 KB. | esm -appgloballistblobcount |
| -keystore | Checks the Service Manager certificate, including these files:<br>• `Server.keystore`<br>• `Trustedclients.keystore`<br>• `cacerts` | esm -keystore |
| -pingclusternodes | Sends “ping” and “traceroute” messages to other Service Manager nodes in the current cluster.<br>Maximum ping times: 4<br>Maximum hops: 10 | esm -pingclusternodes |
| -all | Runs all Extended Service Manager commands at one time and returns the results in the output. | esm -all |
| -help | Displays Help information.<br>**Note:** If the -help option is used together with other options, only Help information is returned. | esm -help |
| -dlog | Outputs the command result to html and txt files. | esm -all -dlog |

# Configuration commands (conf)

Configuration commands extract configuration items from the sm.cfg and sm.ini files, which will be used to diagnose server configuration issues against certain predefined validation rules.

| Option | Description | Usage |
|---|---|---|
| -dbtype | Retrieves database server type. | conf -dbtype |
| -dbinst | Retrieves the database server instance. | conf -dbinst |
| -ini | Retrieves the sm.ini content.<br><br>**Note:** The `sm.ini` content can also be captured in GUI mode, where the validation result is included in the command output. | conf -ini |
| -cfg | Retrieves the sm.cfg content.<br><br>**Note:** The `sm.cfg` content can also be captured in GUI mode, where the validation result is included in the command output. | conf -cfg |
| -env | Retrieves system environment settings (returned by the `env` operating system command) | conf -env |
| -all | Runs all Configuration commands at one time and returns the results in the output. | conf -all |
| -help | Displays Help information.<br><br>**Note:** If the -help option is used together with other options, only Help information is returned. | conf -help |
| -dlog | Outputs the command result to html and txt files. | conf -all -dlog |

# Database commands (db)

Database commands collect information about the database that Service Manager uses.

The timeout for Database commands is 60 seconds.

**Note:** If you are running these commands with an Oracle database, you must create an OJDBC_LIB environment variable on the system and set its value to the Oracle driver path for the driver to be loaded successfully.

| Option | Description | Usage |
|---|---|---|
| -version | Retrieves the database server version. | db -version |
| -info | Retrieves the server information:<br>**SQL Server:** collation<br>**Oracle:** characterset information; case-sensitivity information<br>**DB2:** DB configuration | db -info |
| -list | Retrieves the database (tablespace) list. | db -list |
| -timezone | Retrieves the database time zone and returns the time offset from the UTC/GMT time in hours. | db -timezone |
| -schema | Retrieves the table and index schema of the Service Manager database and outputs the information into an `SM_schema.sql` file.<br>**Note:** This command works only with Oracle databases and requires that the sqlplus utility is installed on the system. | db -schema |
| -all | Runs all Database commands at one time and returns the results in the output. | db -all |
| -help | Displays Help information.<br>**Note:** If the -help option is used together with other options, only Help information is returned. | db -help |
| -dlog | Outputs the command result to html and txt files. | db -all -dlog |

# Operating System commands (os)

Operating System commands collect basic information about the current operating system.

The timeout for Operating System commands is 180 seconds.

| Option | Description | Usage |
|---|---|---|
| -ip | Retrieves the server IP addresses. | os -ip |
| -diskspace | Retrieves the disk space on the server, including the total space and free space. | os -diskspace |

| Option | Description | Usage |
|---|---|---|
| -sys | Retrieves server system information.<br>• Windows: systeminfo<br>• AIX: prtconf<br>• HPUX PA-RISC: model<br>• HPUX ITATIUM: machinfo<br>• Solaris: isainfo -kv<br>• Linux: uname -a | os -sys |
| -openfile | Retrieves the open file limit as returned by the `ulimit -n` command.<br>**Note:** Only for UNIX. | os -openfile |
| process | Retrieves all processes that are currently running.<br>• Unix: ps -ef<br>• Windows: wmic process get executablepath | os -process |
| -ipcs | Retrieves the status of inter-process communication | os -ipcs |
| -sharedmemory | Retrieves the maximum size of shared memory and the count of shared memory segments.<br>• Solaris: sysdef<br>• Linux: sysctl -n<br>• HPUX: kctune -v<br>• AIX: Not available | os -sharedmemory |
| -udpbuffer | Retrieves the UDP buffer size.<br>• Solais: ndd -get<br>• Linux: sysctl -n<br>• AIX: no -o<br>• HPUX: ndd -get | os -udpbuffer |
| -all | Runs all Operating System commands at one time and returns the result in the output. | os -all |

| Option | Description | Usage |
|---|---|---|
| -help | Displays Help information.<br><br>**Note:** If the -help option is used together with other options, only Help information is returned. | os -help |
| -dlog | Outputs the command result to html and txt files. | os -all -dlog |

**Note:** For Windows platforms, x86 represents the 32-bit version and x64 represents the 64-bit version.

# Web Service commands (ws)

Web Service commands determine the Service Manager status by sending a simple SOAP request to the http://localhost:13080/SM/ui endpoint (when run on the local server) and checking the response.

The timeout for Web Service commands is 60 seconds.

| Option | Description | Usage |
|---|---|---|
| -getpreferences | Returns the preference operation response.<br><br>**Note:** Returns responses through HTTP server ports. | ws -getpreferences |
| -all | Runs all Web Service commands at one time and returns the result in the output.<br><br>**Note:** Only one option is defined for the Web service command group now. | ws -all |
| -help | Displays Help information.<br><br>**Note:** If the -help option is used together with other options, only Help information is returned. | ws -help |
| -dlog | Outputs the command result to html and txt files. | ws -all -dlog |

# Save commands (save)

Save commands save required files on the Service Manager server. Service Manager Doctor can save up to 10 Service Manager Doctor logs, and each log can have a maximum of 1 megabyte in size.

The timeout for Save commands is 50 seconds.

| Option | Description | Usage |
|---|---|---|
| -report | Saves html and txt reports in the current directory. | save -report |
| -ini | Saves the ini file in the current directory. | save -ini |
| -cfg | Saves the cfg file in the current directory. | save -cfg |
| -lib | Saves the list of files in the lib folder in the current directory. | save -lib |
| -endorsed | Saves the list of files in the endorsed folder in the current directory. | save -endorsed |
| -run | Saves the list of files in the RUN folder in the current directory. | save -run |
| -ssoconfig | Saves the SSO configuration file in the RUN folder in the current directory.<br>**Note:** This file does not always exist. | save -ssoconfig |
| -logs | Saves all logs generated for Service Manager | save -logs |
| -smdlog | Saves all Service Manager Doctor logs.<br>**Note:** Service Manager Doctor logs are not collected by the `run -all` command. | save -smdlog |
| -udp | Saves the `udp.xml` file. | save -udp |
| -udpcluster | Saves the `udpcluster.xml` file. | save -udpcluster |
| -licfile | Saves the `LicFile.txt` file. | save -licfile |
| -clientcfg | Saves Windows client configurations if a Windows client is installed on this machine. | save -clientcfg |
| -tnsnames | Saves the `tnsname.ora` file for the Oracle database. | save -tnsnames |
| -dbschema | Saves the output file (`SM_schema.sql`) of the `db -schema` command for the Oracle database. | save -dbschema |
| -all | Runs all Save commands at one time and returns the result in the output. | save -all |
| -help | Displays Help information.<br>**Note:** If the -help option is used together with other options, only Help information is returned. | save -help |

# Set commands (set)

The Set command group now includes only one command that sets the `-dlog` parameter.

| Option | Description | Usage |
|---|---|---|
| -dlog | Enables or disables the -dlog option for all commands. However, the -dlog option specified in each command overrides this setting. | set -dlog true<br>set -dlog 1<br>set -dlog false<br>set -dlog 0 |
| -schemacheck | Enables or disables database schema check for the `run -all` or `esm -all` commands. | set -schemacheck 1<br>set -schemacheck true<br>set -schemacheck 0<br>set -schemacheck false |
| -globallistcheck | Enables or disables globallist blob field check for the `run -all` or `esm -all` commands. | set -globallistcheck 1<br>set -globallistcheck true<br>set -globallistcheck 0<br>set -globallistcheck false |
| -help | Displays Help information.<br>**Note:** If the -help option is used together with other options, only Help information is returned. | set -help |

# Run commands (run)

Run commands execute multiple commands or multiple command groups.

| Option | Description | Usage |
|---|---|---|
| -sm | Runs all Service Manager Runtime commands in a sequence and returns the results in the output.<br>**Note:** Equivalent to `sm -all`. | run -sm -db -os |
| -esm | Runs all Extended Service Manager commands in a sequence and returns the results in the output.<br>**Note:** Equivalent to `sm -all`. | run -esm -db |
| -db | Runs all Database commands at one time and returns the results in the output.<br>**Note:** Equivalent to `db -all`. | run -db |
| -conf | Runs all Configuration commands at one time and returns the results in the output.<br>**Note:** Equivalent to `conf -all`. | run -conf -dlog |
| -os | Runs all Operating System commands at one time and returns the results in the output.<br>**Note:** Equivalent to `os -all`.<br>. | run -os |
| -ws | Runs all Web Service commands at one time and returns the results in the output.<br>**Note:** Equivalent to `ws -all`. | run -ws |
| -all | Runs all commands at one time and returns the results in the output.<br>**Note:** Peforms a full health check. | run -all |
| -zip | Packages all data to an sm_doctor_saved.zip file, which include the SM log files, endorsed file list, lib file list, html report, txt report, sm.cfg and sm.ini. | run -all -zip |
| -help | Displays Help information.<br>**Note:** If the -help option is used together with other options, only Help information is returned. | run -help |

# Clear commands (clear)

The Clear command group deletes log files Service Manager Doctor generated, and clears the content of the current log file if the tool is still running.

| Option | Description | Usage |
|---|---|---|
| -dlog | Clears Service Manager Doctor logs. | clear -dlog |
| -help | Displays Help information.<br><br>**Note:** If the -help option is used together with other options, only Help information is returned. | clear -help |

# Help command (help)

The Help command displays help information.

# '-dlog' parameter

The `-dlog` parameter is available for all commands except the "help" command. Adding this parameter to a command is equivalent to running `set -dlog true` or `set -dlog 1` except that the parameter included in the command overrides the global setting configured by `set -dlog false` and `set -dlog 0`.

**Note:** The reason why you may use the `-dlog` parameter instead of `-log` is that the `-log` parameter itself is a valid parameter of Service Manager.

# Configuration Validation Rules

This section describes the usage of validation rules in the Service Manager Doctor Tool.

## Configuration rule file

**Caution:** It is not recommended that you edit the configuration rule file manually in this version of the tool.

The configuration rule file is an XML file with predefined rules that are used to validate Service Manager server configurations. All configuration information is based on the `sm.ini` and `sm.cfg` files, where `sm.cfg` is prioritized higher than `sm.ini`.

The elements of the configuration rule file include source, domain, rule, condition, conditonrule, operation, and output. Configuration rules for all configurations should be defined within the configuration source. Configuration rules used for specific validation should be defined within a specific domain. There can be multiple domains within each source, and multiple rules within each domain. See "Rule Configuration File Snippets" on page 58.

## Considerations for updating the rule file

- This tool includes an `SM_Configuration_Rule.xsd` file to maintain the integrity of the rule file. Detailed messages are displayed in the validation results, including information about the row, column, and other violation specifics.
- If one rule serves as a condition for another rule, the first rule cannot have conditions of its own. Or, a `TWO_LEVEL_CONDITION_FOUND` error is returned.
- For operation elements within a rule element, the "param" and "action" attributes are required. The "target" and "type" attributes are optional, but they are mutually dependent. If one parameter is defined, you must define the other one too.
- For condition elements, if "operator" and "target" are not defined, they default to `and` and `true` respectively.
- In addition to customized rules, you can use the generic rules directly: is32OS, is64OS, isUnix, and isWindows.
- An error 100018 is returned if the XML content cannot be parsed.
- In the current version of the tool, only the configuration data source is editable, which includes both the `sm.ini` and `sm.cfg` files.

# Validation results

Validation results are included as part of the command output for the `conf -ini` and `conf -cfg` commands in command-line mode. In GUI mode, a separate column is displayed next to the command results if a rule failure is detected.

# CmdOnDemand.xml

A typical `CmdOnDemand.xml` file resembles the following codes:

```
<?xml version="1.0" encoding="UTF-8"?>
<commands>
<command name="sm" description="sm server commands" provider="hp">
    <param name="-reportstatus" description="SM runtime status"/>
    <param name="-reportcache" description="SM cache status"/>
    <param name="-reportipc" description="SM semaphore use"/>
    <param name="-reportlocks" description="SM lock information"/>
    <param name="-reportlic" description="SM licence information"/>
    <param name="-version" description="SM version"/>
    <param name="-verifylic" description="SM verify license"/>
    <param name="-appversion" description="SM application version"/>
    <param name="-reportshm" description="SM shared memory"/>
    <param name="-reportsem" description="SM semaphore"/>
    <param name="-sqlverifyconnection" description="SM verify DB connection"/>
</command>
<!--
Any command or script should be under RUN directory to be run with SM doctor;
more entries could be added like below.
<command name="supportTool.sh" description="Integration with existing support
tool to trace system information" />
-->
</commands>
```

To add a new command to the `CmdOnDemand.xml` file, follow these steps:

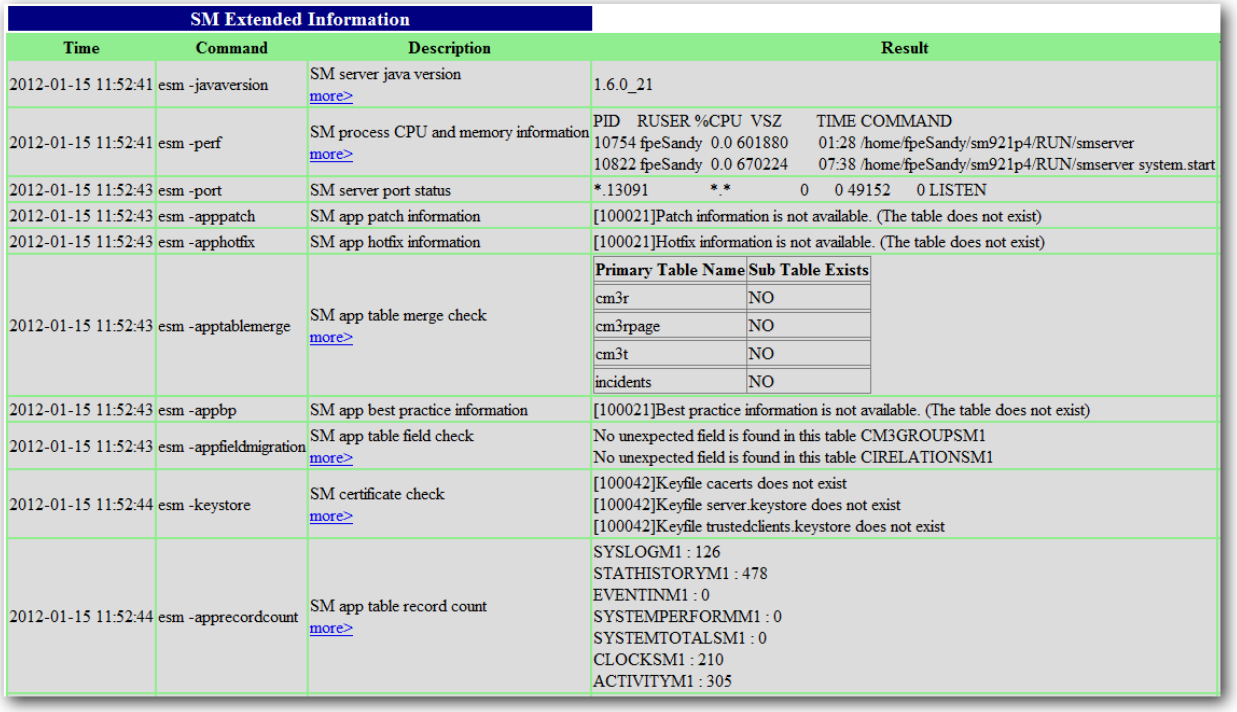
1. Open the `CmdOnDemand.xml` file in a text editor.
2. Add more entries similar to **<param name="-version" description="SM version"/>**.
3. Add the required Service Manager command parameters in the "name" attribute.
4. Add the command description in the "description" attribute, which will be used for HTML/TEXT report generation.

**Note:** To run external commands, make sure that the target scripts or executables reside in the RUN directory. Do not add "param" elements for additional command arguments. Instead, include command arguments in the "name" attribute of the "command" element.

We do not recommend that you run external commands that work with background processes or I/O streams, such as `uname -a &` and `ls -lrt > 1.txt`.

# HTML Log Snippets

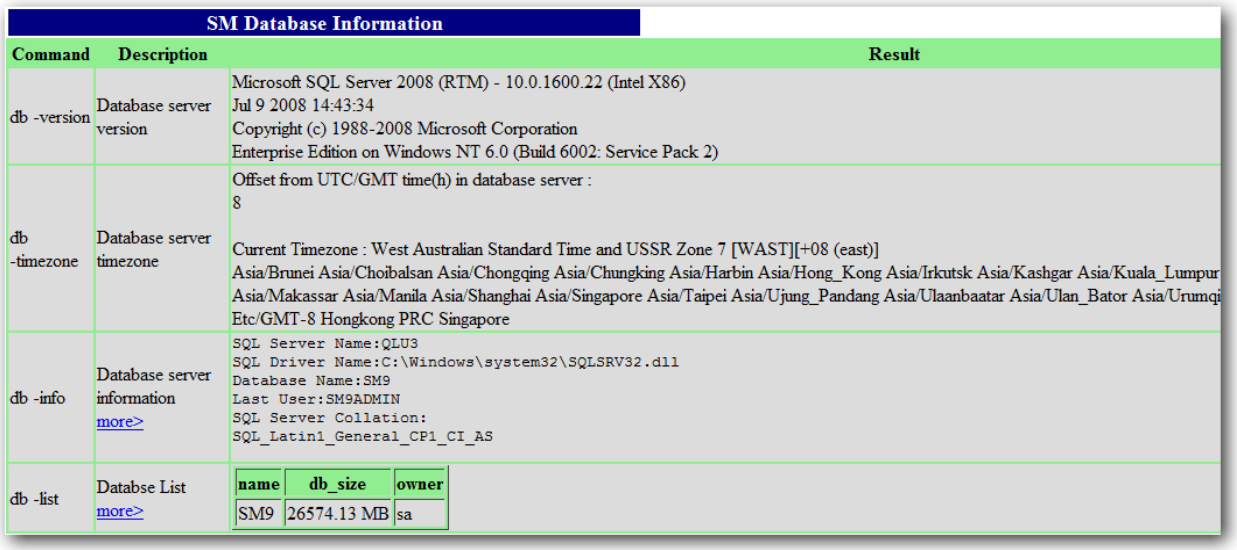
The Extended Service Manager report sample is shown in the screenshot below:



**SM Extended Information**

| Time | Command | Description | Result |
|---|---|---|---|
| 2012-01-15 11:52:41 | esm -javaversion | SM server java version<br>more> | 1.6.0_21 |
| 2012-01-15 11:52:41 | esm -perf | SM process CPU and memory information<br>more> | PID RUSER %CPU VSZ TIME COMMAND<br>10754 fpeSandy 0.0 601880 01:28 /home/fpeSandy/sm921p4/RUN/smserver<br>10822 fpeSandy 0.0 670224 07:38 /home/fpeSandy/sm921p4/RUN/smserver system.start |
| 2012-01-15 11:52:43 | esm -port | SM server port status | *.13091 *.* 0 0 49152 0 LISTEN |
| 2012-01-15 11:52:43 | esm -apppatch | SM app patch information | [100021]Patch information is not available. (The table does not exist) |
| 2012-01-15 11:52:43 | esm -apphotfix | SM app hotfix information | [100021]Hotfix information is not available. (The table does not exist) |
| 2012-01-15 11:52:43 | esm -apptablemerge | SM app table merge check<br>more> | Primary Table Name / Sub Table Exists<br>cm3r: NO<br>cm3rpage: NO<br>cm3t: NO<br>incidents: NO |
| 2012-01-15 11:52:43 | esm -appbp | SM app best practice information | [100021]Best practice information is not available. (The table does not exist) |
| 2012-01-15 11:52:43 | esm -appfieldmigration | SM app table field check<br>more> | No unexpected field is found in this table CM3GROUPSM1<br>No unexpected field is found in this table CIRELATIONSM1 |
| 2012-01-15 11:52:44 | esm -keystore | SM certificate check<br>more> | [100042]Keyfile cacerts does not exist<br>[100042]Keyfile server.keystore does not exist<br>[100042]Keyfile trustedclients.keystore does not exist |
| 2012-01-15 11:52:44 | esm -apprecordcount | SM app table record count<br>more> | SYSLOGM1 : 126<br>STATHISTORYM1 : 478<br>EVENTINM1 : 0<br>SYSTEMPERFORMM1 : 0<br>SYSTEMTOTALSM1 : 0<br>CLOCKSM1 : 210<br>ACTIVITYM1 : 305 |

The Database report sample is shown in the screenshot below:



**SM Database Information**

| Command | Description | Result |
|---|---|---|
| db -version | Database server version | Microsoft SQL Server 2008 (RTM) - 10.0.1600.22 (Intel X86)<br>Jul 9 2008 14:43:34<br>Copyright (c) 1988-2008 Microsoft Corporation<br>Enterprise Edition on Windows NT 6.0 (Build 6002: Service Pack 2) |
| db -timezone | Database server timezone | Offset from UTC/GMT time(h) in database server :<br>8<br><br>Current Timezone : West Australian Standard Time and USSR Zone 7 [WAST][+08 (east)]<br>Asia/Brunei Asia/Choibalsan Asia/Chongqing Asia/Chungking Asia/Harbin Asia/Hong_Kong Asia/Irkutsk Asia/Kashgar Asia/Kuala_Lumpur<br>Asia/Makassar Asia/Manila Asia/Shanghai Asia/Singapore Asia/Taipei Asia/Ujung_Pandang Asia/Ulaanbaatar Asia/Ulan_Bator Asia/Urumqi<br>Etc/GMT-8 Hongkong PRC Singapore |
| db -info | Database server information<br>more> | SQL Server Name:QLU3<br>SQL Driver Name:C:\Windows\system32\SQLSRV32.dll<br>Database Name:SM9<br>Last User:SM9ADMIN<br>SQL Server Collation:<br>SQL_Latin1_General_CP1_CI_AS |
| db -list | Databse List<br>more> | name / db_size / owner<br>SM9 / 26574.13 MB / sa |

# Rule Configuration File Snippets

**SM_Configuration_Rule.xml snippet**

```
<?xml version="1.0" encoding="UTF-8"?>

<xml xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

      xsi:noNamespaceSchemaLocation="SM_Configuration_Rule.xsd" version="1.0">

<source id="configuration" description="service mangaer configuration validation
rules">

…

<domain id="StartUp" description="validate sm startup configuration" >

            <rule id="sync" description="validate synch parameter" >

                  <operation param="sync" action="ValidateIsNotNull" />

            </rule>

            <rule id="systemstart" description="validate system.start" >

                 <operation param="system.start" action="ValidateIsNotNull" />

            </rule>

            <rule id="startuprule" description="validate startup by combination of
sync and system.start" >

                  <condition operator="and" target="false">

                        <conditionrule id="sync" />

                        <conditionrule id="systemstart" />

                  </condition>

                  <output type="failed" message="failed: sync and system.start
processes should not
be started at the same, the recommendation is to remove sync from configuration.
For further information,
please refer to “Configuring a horizontal scaling environment” on help server." />

                  <output type="success" message="success: sync and system.start
are not set both" />

            </rule>

   </domain>

……
```

**SM_Configuration_Rule.xsd snippet**

```
<xs:complexType name="rule_type">
```

```
    <xs:sequence>
        <xs:element name="condition" minOccurs="0" type="condition-type">
            <xs:unique name="NoRepeatConditionRule">
<xs:selector xpath="conditionrule"/>
<xs:field xpath="@id"/>
</xs:unique>
             </xs:element>
             <xs:element name="operation" minOccurs="0" type="operation_type">
             </xs:element>
             <xs:element name="output" minOccurs="0" maxOccurs="unbounded"
type="output_type">
             </xs:element>
        </xs:sequence>
        <xs:attribute name="id" type="xs:string" use="required" />
        <xs:attribute name="description" type="xs:string" use="optional" />
        <xs:attribute name="mode" use="optional" >
        <xs:simpleType>
                <xs:restriction base="xs:string">
                    <xs:enumeration value="multiple" />
                    <xs:enumeration value="single" />
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
</xs:complexType>
```

# Error References

The following table lists the possible errors that the Service Manager Doctor commands may return.

| Error Code | Description | Category | Error Message (partial) |
|---|---|---|---|
| 100000 | SYS_ERROR | SYSERROR | System error, please reach support team… |
| 100001 | UNKNOWN_ERROR | SYSERROR | Unknown error, please try again later or reach SM Doctor admin for a solution. |
| 100002 | COMMAND_NOT_EXIT | PARSEERROR | This command <*command*> is not recognizable, please enter again. |
| 100003 | NO_SUCH_OPTION | PARSEERROR | This option <*option*> is not recognizable for this command, please enter again |
| 100004 | NO_SUCH_ PARAMETER | PARSEERROR | *Xxx* is not passed to any parameter, please enter again. |
| 100005 | ARGU_NOT_EXIT | PARSEERROR | This argument <*argument*> is not recognizable, please enter again. |
| 100006 | ONLY_LOG_ERROR | PARSEERROR | Log option <*option*> is only valid with another command line option, please enter again. |
| 100007 | HELP_LOG_ERROR | PARSEERROR | Log option is not valid with help option, please enter again. |
| 100008 | HELP_ERROR | PARSEERROR | Help option is valid by <*command*> -help without other options. Please enter again. |
| 100009 | DUPLICATE_ERROR | PARSEERROR | Duplicate options are found, please remove the same ones and keep each unique. |
| 100010 | LOG_PARAM_ERROR | PARSEERROR | Only true(1) or false(0) is allowed for this option. |
| 100011 | NODATA | NODATA | No data is available for this command. |
| 100012 | DB_DRIVER_ERROR | DBERROR | Database driver can not be loaded. |
| 100013 | SQL_EXCEPTION | DBERROR | SQLException is caught … |
| 100014 | TABLE_DOES_NOT_ EXIT | DBERROR | This table <*table_name*> does not exit. |

| Error Code | Description | Category | Error Message (partial) |
|---|---|---|---|
| 100015 | SM_NOT_FOUND | SYSERROR | Service Manager is not found, please check. |
| 100016 | SM_NOT_RUNNING | SYSERROR | Service Manager is not running, please check. |
| 100017 | COMMAND_TIMEOUT | SYSERROR | Command execution timeout. |
| 100018 | UNSATISFIED_LINK_ ERR OR | DBERROR | Unsatisfied link error. |
| 100019 | RULE_PARSING_ ERROR | SYSERROR | Exception happened when parsing XML rule configuration file. |
| 100020 | OTHER_PARSE_ ERROR | PARSEERROR | Invalid input <*input*>. |
| 100021 | INFO_NOT_AVAILABLE | SYSERROR | *Xxx* information is not available. |
| 100022 | RECORD_COUNT_ EXCEE D_THRESHOLD | DBERROR | The record count in table <*table_name*> exceeds threashold <*threshold_value*>, purge/ archive is needed. |
| 100023 | TABLE_MERGE_ NEEDED | DBERROR | M2/M3 tables exist for *xxx*, table merge is needed. |
| 100024 | FIELD_NOT_EXPECTED | DBERROR | This field *xxx* is not expected in table… |
| 100025 | ORACLE_DRIVER_ NOT_F OUND | DBERROR | Oracle driver could not be loaded, please make sure driver's jar exists under *xxx*. |
| 100026 | GLOBALLISTS_ VALUELIS T_LENGTH_ EXCEED_THR SHOLD | DBERROR | Valuelist length of *xxx* keys in globallists table exceeds threshold. |
| 100027 | DATABASE_AUTH_ FAILED | DBERROR | Username or password is invalid, database could not be connected. |
| 100028 | FILE_NOT_SAVED | FILEERROR | File could not be saved. |
| 100029 | FILES_NOT_FULLY_ SAVED | FILEERROR | Files could not be (fully) saved. |
| 100030 | FILE_NOT_EXISTS | FILEERROR | *xxx* does not exist. |
| 100031 | FILES_NOT_EXIST | FILEERROR | *xxx* do not exist. |
| 100032 | NO_NEED_TO_SAVE_ TNS NAMES | FILEERROR | No need to save tnsnames.ora for *xxx*. |

| Error Code | Description | Category | Error Message (partial) |
|---|---|---|---|
| 100033 | NO_CLIENT_CONF_ SAVED | FILEERROR | No running sm client is detected, no configuration files could be saved. |
| 100034 | WEBSERVICE_AUTH_ FAIL ED | WEBSERVICE ERROR | Username or password is invalid, server could not be connected. |
| 100035 | WEBSERVICE_ TIMEOUT | WEBSERVICE ERROR | Timeout for this soap request. |
| 100036 | UNSUPPORTED_OS | SYSERROR | SM Doctor does not support this operating system <*system_name*>. |
| 100037 | SSL_ENABLED | WEBSERVICE ERROR | Web service call is not done because SSL is enabled, you can start a SSL disabled process to run this command. |
| 100038 | UNSUPPORTED_DB | DBERROR | SM Doctor does not support this database. |
| 100039 | CMD_LIMITED_TO | SYSERROR | This command is limited to *xxx*. |
| 100040 | KEYTOOL_ERROR | FILEERROR | Keytool error happened by checking *xxx*. |
| 100041 | NO_LOCAL_PING | SYSERROR | Only vertical scaling setting is found, local host ping/ tracert is skipped. |
| 100042 | KEYFILE_NOT_EXIST | SYSERROR | Keyfile <*filename*> does not exist. |
| 100043 | PARAMETER_NOT_ EXIST | SYSERROR | Parameter <*parameter*> is not configured. |
| 100044 | SQLPLUS_NOT_FOUND | DBERROR | Sql plus is not found, please set its path in <*variable*>. |

# Troubleshooting

**Issue 1: Environment setting issues leading to coredump**

**Symtoms**

The coredump happens with the following error messages:

```
/usr/lib/dld.sl: Bad magic number for shared library: <library>
```

```
/usr/lib/dld.sl: Exec format error
```

**Resolution**

Verify that the database driver path is set correctly in the corresponding library path environment variable and that the driver exists in the specified path.

**Issue 2: 'db -version' command returns wrong results on DB2**

**Symtoms**

The following database connection error message is displayed when database connection fails for 'db -version' on DB2:

```
[100012]Database driver cannot be loaded,
```

```
please double check LIBPATH, and make sure 32 bit lib exists and is ahead of 64 bit.
```

**Resolution**

Run `db2level` under `db2` command shell directly to get database information if necessary. This is to be fixed in next release, since `db2` version information could be returned when connection fails.

# Send Documentation Feedback

If you have comments about this document, you can contact the documentation team by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

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